Yosemite Slough Technical Stakeholder Committee Meeting #4

- USEPA's Working-Draft EECA for Yosemite Slough

- *May 2, 2013*
- *EPA Offices, San Francisco, CA*

Creek and Watershed Map of the Yosemite Creek Watershed

Map by William Lettis and Associates Inc; Oakland Museum of California; and San Francisco Estuary Institute

Key Topics for Today's Meeting

- Discuss EPA's Recommended Alternative (aka Alternative #5)
- Discuss the Rationale for Alternative #5
- Explain decisions made in the EECA versus decisions to be made during remedy design (aka the "Iterative Approach").
- Lay out the next steps that needs to get done on the road to final cleanup of the Slough

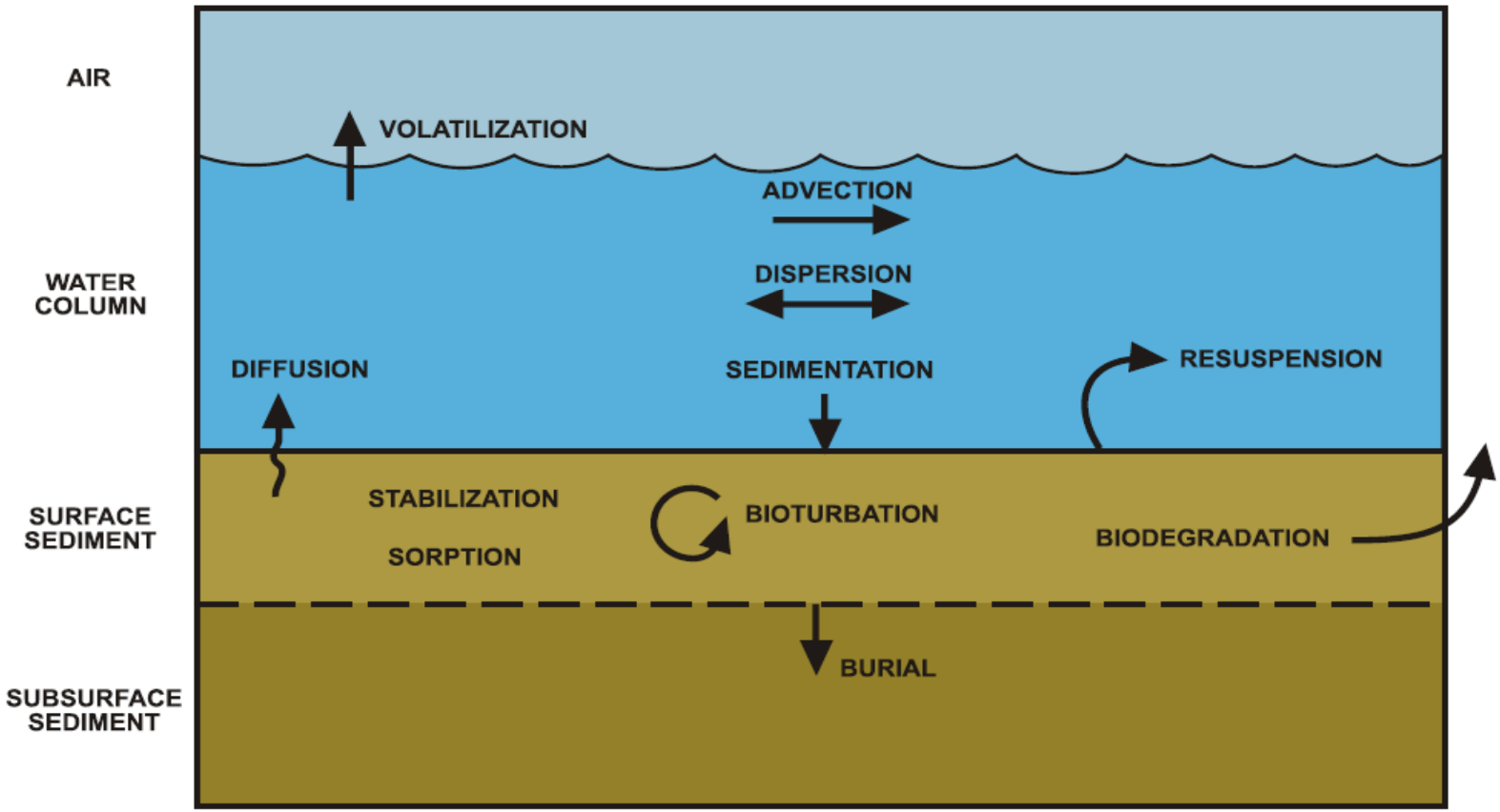
Yosemite Slough Site Boundary

EPA Activities since last TSC Meeting

- Met with PRP tech reps
- Met with Natural Resource Trustees and Water Board
- Completed site-specific eco risk evaluations for the California Clapper Rail and the Green Sturgeon (Appendix A of the EECA)
- Wrote the EECA (Authors: Ecology and Environment staff and EPA R9 Superfund Staff)
- Coordinated the rationale for Alternative 5 with EPA's Headquarters Contaminated Sediment Technical Assistance Group (CSTAG)

What and where is the risk?

Migration Pathways of COCs at Sediment Sites



Key Project Assumptions Regarding Risk at Yosemite Slough

- Site risk originates in the biologically active zone (BAZ)
- EPA believes the Site BAZ to be 6-inches deep
  - The lowest elevation of the BAZ is the boundary of the biologic exposure point.
- EPA has added an 18-inch margin of safety below the BAZ for purposes of alternative development and evaluation in the EECA.
- PCBs and Lead are the primary contaminants of concern (COC) in the BAZ.
  - Other site contaminants are collocated with PCBs or Lead

Biologically Active Zone (BAZ)

- Defined as the depth of biologic processes or activity
- The area within the sediment in which a majority of benthic macroinvertebrates are generally found
- Often the top 10-15 cm (approx. 4-6 inches) and usually less than 30 cm (approx. 1 foot)
- EPA applies sediment cleanup goals to the BAZ; below the BAZ there is no exposure under undisturbed conditions

BAZ and Yosemite Slough

- Sediment cores collected during the Parcel F Validation Study show a well-mixed oxidized zone from 2 to 10 centimeters thick.
- Sediment profile images indicate approximate depth of active bioturbation and feeding voids at depths up to 15 centimeters.
- Polychaetes and burrows were observed to depths of 20 to 30 centimeters, although at lower densities than in the surficial layer.
- Based on this information, EPA has currently defined the BAZ as 15 cm (approx. 6 inches), consistent with the assumption in the SF Bay TMDL and the South Basin study results.

What is EPA's Recommended Cleanup Alternative for Yosemite Slough?

Key Project Assumptions for the Development of Cleanup Alternatives

- **Based on EPA guidance and experience,** at sediment sites, an optimum remedy:
  - Addresses site risk with minimal short-term impacts and maximum long-term effectiveness
  - Usually consists of a combination of technologies
- **Consider Future Land Use**: Final remedy must maintain bathymetry site-wide and support a healthy mudflat ecology
- **Remember Bigger Picture:** Slough cleanup is part of larger South Basin cleanup (Navy) and slough wetlands cleanup and restoration (State Parks).
- **Use Iterative Approach:** Evaluate and integrate data collected post-EECA to improve remedy design and remedy implementation.

EPA's Three Evaluation Criteria for Superfund Removal Alternatives

1 Effectiveness

- Long-term effectiveness and protection of human health and the environment
- Short-term protection of site ecology
- Short-term protection of human health
- Minimization of short-term construction impacts to the local community
- Ability to achieve site cleanup objectives

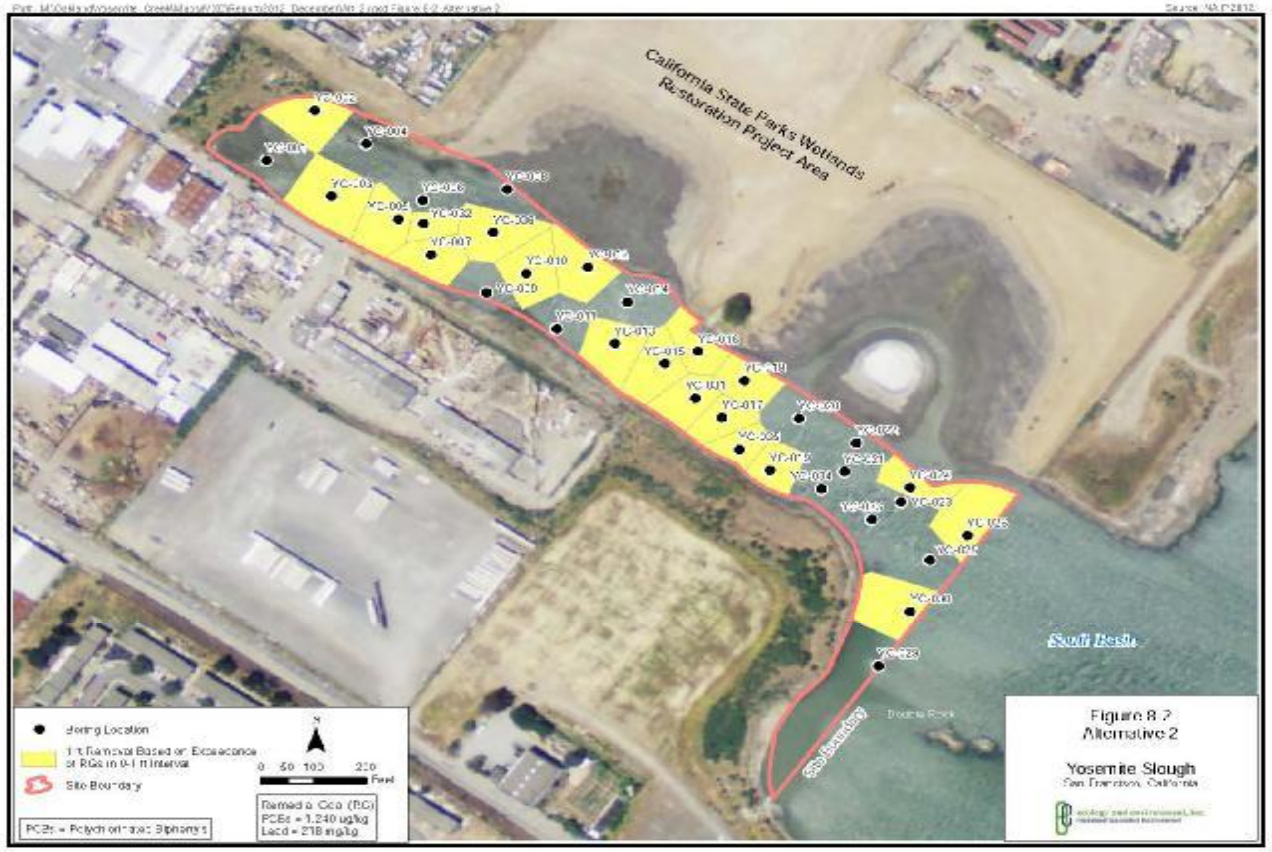
2 Implementability

- Technical feasibility
  - » Construction and operational considerations
  - » Demonstrated performance/useful life
  - » Adaptable to environmental conditions
- Administrative feasibility
  - » Easements or right-of-ways required
  - » Impact on adjoining property
  - » Ability to impose institutional controls

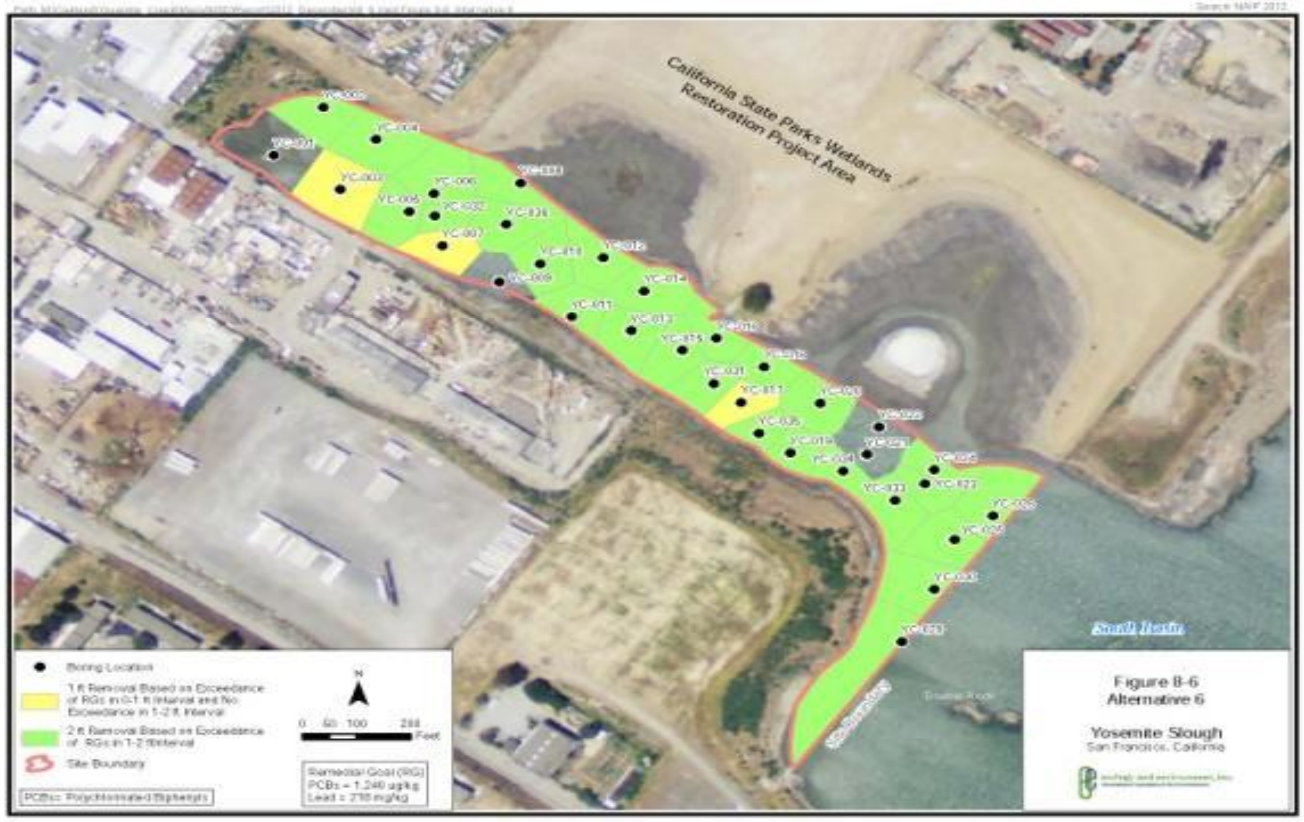
3 Cost

- Capital cost
- Operation and maintenance cost

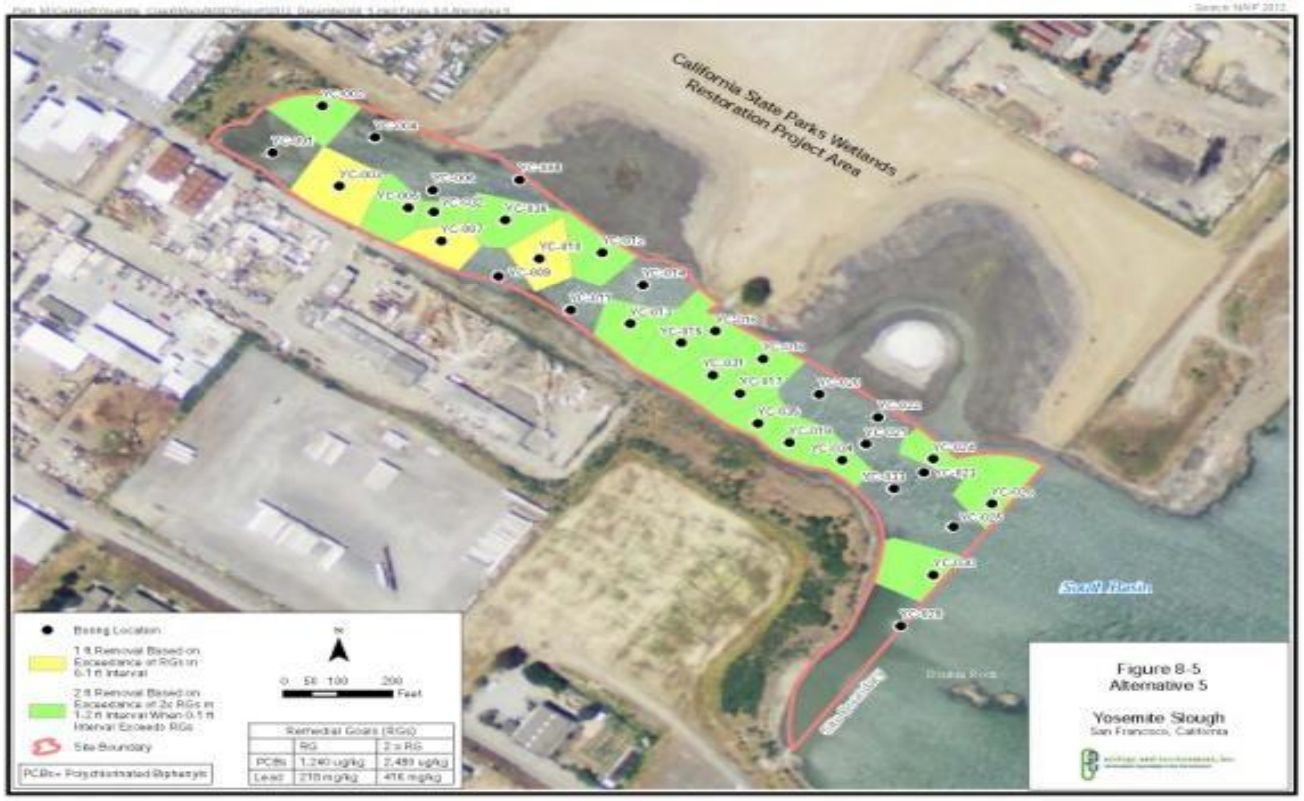
<u>Alternative 2</u> – Removal of sediments in the top 1-foot interval where COCs exceed RGs, engineered cap, EMNR/MNR and ICs



<u>Alternative 6</u> – Removal of sediments in the top 2-foot interval where COCs exceed RGs, engineered cap, EMNR/MNR and ICs



<u>Alternative 5</u> — Remove sediments in the top 1-foot interval where COCs exceed RGs, 2-foot intervals in same areas where COCs exceed two times RGs, engineered cap, EMNR/MNR and ICs



Rationale of Choosing Alt. 5

- Review Table 9-1 from the EECA (see handout)
- Alternative 5 is recommended because:

1. Provides the best opportunity to achieve RAOs and RGs in a timely, efficient, and permanent fashion while minimizing short-term impacts to the Site ecology and local community.
2. Includes flexibility to integrate results of the design studies to optimize the mix of technology options to improve RAO and RG achievement
3. All decisions during the design stage are subject to EPA approval including the final thickness of the engineered cap and the use of EMNR/MNR where deemed effective.

Details about Alternative 5

(EPA's Recommended Alternative; See EECA Sections 8.1 and 8.6)

- ✓ Removal of highest risks to the BAZ
  - Mechanical Excavation (dry) and/or Mechanical Dredge (wet) and/or Hydraulic Dredge
  - Dredge depths may be adjusted based on design of an effective cap
  - Sediment staging and dewatering
  - Off-Site disposal via trucking
- ✓ Engineered Sediment Cap in dredge zones
  - Capping material selected to maximize long-term effectiveness and be supportive of a mudflat ecology

Details about Alternative 5

(EPA's Recommended Alternative; See EECA Sections 8.1 and 8.6)

- ✓ Stabilized Slough Banks
  - Prevent erosion and recontamination
  - Coordinate with State Parks Phase 3 design
- ✓ Monitored Natural Recovery and Enhanced EMNR
  - To be integrated into design only for marginal risks to BAZ if technically supported and approved by EPA during the design
- ✓ Activity and Use Restrictions (aka Institutional Controls)
  - No activities incompatible with the sediment cap
  - Only allow uses consistent with State Parks General Plan
  - Signage and surveillance as appropriate

Details about Alternative 5

(EPA's Recommended Alternative See EECA Sections 8.1 and 8.6)

- ✓ Post Removal Site Control and Effectiveness Monitoring
  - Minimum 20 years of effectiveness checks
- ✓ Multi-agency efforts to control upland pollution sources
  - SWPPPs and dust controls for adjacent properties
  - NPDES/CSO and pre-treatment enforcement
  - Anti-midnight dumping initiatives
  - Public outreach and teamwork to keep the Slough clean

Q: What is the "Iterative Approach" to Site Cleanup ?

Iterative Approach: Design Studies

- EE/CA currently identifies 13 technical studies that may be carried out during the design
- This list of design studies may be expanded or modified as we start to focus on the design deliverables and schedule
- Plus, remediation contractor expertise should be integrated in to the design and remedy implementation planning

Examples of Decisions at Design

- Engineering details on sediment cap and cap content
- Dredge technique and controls for sediment re-suspension during dredging
- Role of MNR or EMNR, if any, for site areas marginally above RGs
- Engineered details slough bank stabilization
- Engineered details about CSO outfall apron modification, if any;

Examples of Decisions at Design (continued)

- Sediment Processing and Treatment Plan
- Odor, noise, dust, and traffic management Plans
- Institutional Controls Monitoring Plan
- Effectiveness Monitoring Plan

BAZ and Cap Design at Yosemite Slough

- The cap design must address the BAZ and other factors that determine long-term protectiveness and effectiveness (i.e., long-term cap performance)
- Other factors to be considered include:
  - Sediment stability (erosion and deposition)
  - Bioturbation
  - Other sources of sediment disturbance (e.g., human activities such as digging/excavation; boating, etc.), which can be controlled in part by Institutional Controls (ICs)
- The actual cap thickness could vary across the slough depending on site-specific conditions.
- Capping materials and placement could vary as well (e.g., an armored cap could be used in some areas).

Project Staging and Sediment Dewatering Areas

Exact areas to be determined in coordination with State Parks

Q: What happens next?

EPA's Next Steps

- Address TSC comments in the Working-Draft EECA
- Release Official Draft EECA for Public Comment Period in summer 2013
- Public Meeting tentatively set for mid July
- Finalize EECA based on input from Public
- Issue Action Memorandum based on Final EECA which selects the Final Remedy

EPA's Next Steps (cont'd)

- Negotiate legal settlement with PRPs concerning payment and performance of the Selected Remedy
- After settlement, PRPs design remedy with regulatory agency oversight
- ARARs/Permits Compliance
- PRPs implement slough cleanup with regulatory agency oversight (in summer 2015 or summer 2016)

After Remedy is Complete…

- Navy proceeds with cleanup of Shipyard Parcel F
- State Parks completes remaining wetlands restoration work and adjacent amenities including walking trail (Bay Trail)
- Yosemite Slough enters long-term recovery via:
  - ✓ Remedy Effectiveness Monitoring
  - ✓ Institutional Controls Enforcement
  - ✓ Upland Source Controls Surveillance